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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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TWO INTERNATIONAL PLACE  
BOSTON, MA 02110

EXAMINER

NAFF, DAVID M

ART UNIT PAPER NUMBER

1651

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/929,736

Applicant(s)

SCHUELLER ET AL

Examiner

David M. Naff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37,116-119,122,123,125-130,132 and 133 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37,116-119,122,123,125-130,132 and 133 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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#### **DETAILED ACTION**

An amendment of 12/21/05 amended claims 1, 33, 116, 123 and 132, canceled claims 38, 120, 121 and 124, and added new claim 133.

Claims examined on the merits are 1-37, 116-119, 122, 123, 125-  
5 130, 132 and 133, which are all claims in the application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Objections***

Applicant is advised that should claims 33, 34 and 35 be found  
10 allowable, claims 116, 118 and 119 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a  
15 substantial duplicate of the allowed claim. See MPEP § 706.03(k).

#### ***Claim Objections***

Claim 122 is objected to because of the following informalities: the claim is dependent on canceled claim 121. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

20 Claims 1-37, 126-130 and 132 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey

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to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Adequate support is not found in the specification for claim 1, beginning in line 6, reciting "the stamp exhibits convexity that does not result from a surface texture or pattern". The specification page 4, beginning in line 9, recites "stamping surface-----exhibit convexity in at least one dimension not resulting from a surface texture or pattern". This supports only the stamp surface exhibiting convexity in at least one dimension not resulting from a surface texture or pattern. There is no basis in the specification for broadening the description to the stamp having convexity that is not convexity of the stamp surface and is not in at least one dimension.

Support is not found in the specification for the stamp being "a structure having one opening" as recited in claim 132. The page and line where this recitation occurs in the specification should be pointed out.

#### ***Response to Arguments***

Applicants refer to the specification as providing support. However, as can be seen by comparing the claim language with that used in the specification, the claims are not claiming an invention as recited in the specification.

#### ***Claim Rejections - 35 USC § 112***

Claims 1-37, 116-130, 132 and 133 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly

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point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 and claims dependent thereon are confusing and unclear as to where the stamp exhibits the convexity in relation to the stamping surface that contacts the substrate. Claim 1 does not require a structural relationship between the stamping surface that contacts the substrate and the convexity exhibited by the stamp. The claim is unclear how the stamp surface contacts the substrate when the stamp exhibits convexity as claimed, and how modulating stamp dimensions functions in relation to the convexity of the stamp.

Similarly in claim 133, it is unclear as to where the substrate surface exhibits convexity as claimed in relation to where the stamping surface contacts the substrate during modulating dimensions of the stamp.

Claim 33 is unclear as to the relationship of the lumen to the convexity required in line 1. The claim is further unclear as to the part of the lumen that is the stamping surface, and how modulating to reduce cross-sectional dimensions of the lumen results in contact between a stamping surface and a substrate as required in claim 1.

Claim 33 is further unclear as to structure that constitutes a portal providing communication between the lumen and exterior of the stamp.

Claims 116 and 123 are unclear for the same type of reasons as claim 33.

Claims 126-130 and 132 are unclear as to how the stamp structure required by the claims will function in the method of claim 1 or 116.

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It is uncertain as to the part of the structure that is the stamping surface, and the way in which this part will contact the substrate by modulating dimensions.

***Response to Arguments***

5        Applicants refer to structure described in the specification as making the claims definite. However, the specification cannot put structure in the claims that is not required in the claims to make clear and definite as to the invention claimed. The metes and bounds of the invention are set forth by the claims, and not by the  
10       specification. The claims per se must be definite without having to refer to the specification to know the stamp structure and stamp function required by the claims.

***Claim Rejections - 35 USC § 102***

15       The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

20       (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 9, 30, 37, and 133 are rejected under 35 U.S.C. 102(b) as being anticipated by Scantlebury (3,745,970) (newly applied).

25       The claims are drawn to a method of patterning a surface by providing a stamp having a stamping surface, disposing a substrate proximate to the stamping surface and modulating the dimensions of the

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stamp to place the stamping surface in contact with the substrate, and the stamp before modulating exhibits convexity that does not result from a surface texture or pattern.

Scantlebury discloses applying a pattern to an article by using  
5 air pressure to force a diaphragm containing an inked pattern against an article. As can be seen from figures 7-11, the diaphragm is convex before air pressure is applied and the article is also convex, and air pressure forcing the diaphragm against the article changes the dimensions of the diaphragm.

10 The diaphragm of Scantlebury is a stamp, and the method of Scantlebury is the same as presently claimed.

***Claim Rejections - 35 USC § 103***

Claims 10, 31, 32, 125-130 and 132 are rejected under 35 U.S.C.  
103(a) as being unpatentable over Scantlebury in view of Whitesides et  
15 al (6,180,239 B1).

Claim 10 requires a self-assembled monolayer being transferred. Claims 31 and 32 require the substrate to have a coating and claims 125-130 and 132 require the stamp to have various shapes.

Scantlebury is described above.

20 Whitesides et al disclose patterning a surface by using a stamp having different shapes (Figures 3a-16d), and patterning can be by deforming a flexible planar stamp (col 11, lines 11-13). A self-assembled monolayer can be transferred (col 23, lines 15-20).

It would have been a matter of obvious choice depending on  
25 individual preference and convenience to provide the stamp of

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Scantlebury with a preferred shape as disclosed by Whitesides et al in the absence of unexpected functioning of the stamp. Changing the shape of a stamp without changing its function would have been a matter of individual preference well within the ordinary skill of the art. Whitesides et al disclose (col 9, lines 35-50) deforming the stamp prior to stamping, and would have further suggested deforming the stamp prior to disposing the substrate. A self-assembled monolayer and coating the substrate is suggested by Whitesides et al.

***Claim Rejections - 35 USC § 103***

10 Claim 8 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scantlebury in view of Kumar et al (5,512,131) and Whitesides et al.

Claim 8 requires exposing the substrate to electromagnetic radiation through the stamp, and a portion of the stamp is opaque to the radiation. Claims 27-29 require removing the stamp and using a second stamp.

Scantlebury and Whitesides et al are described above.

Kumar et al disclose using electromagnetic radiation when stamping to put patterns on surfaces (col 3, line 63, col 4, lines 64-65, col 14, lines 33-37, col 16, line 27, col 18, lines 23-25 and col 20, lines 34-35) to convert a species from one state to another. Further disclosed is the use of second stamp (col 3, lines 8-15) to provide a second species.

It would have been obvious to pass electromagnetic radiation through the stamp of Scantlebury onto the substrate being stamped to



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obtain the function of electromagnetic radiation as disclosed by Kumar et al to convert a species from one state to another. Having a portion of the stamp opaque would have been obvious to control the where the electromagnetic radiation contacts the substrate.

5 It would have been further obvious to use in Scantlebury a second stamp as taught by Kumar et al to provide a second species on the substrate. Furthermore, the disclosure of Whitesides et al (col 9, lines 1-10) of contacting the stamp with a surface in a first orientation, removing the stamp, rotating the stamp and reapplication  
10 of the stamp to the surface to obtain a grid pattern would have further suggested removing the stamp and applying a second stamp when a grid pattern is desired.

***Claim Rejections - 35 USC § 103***

Claims 11-26 are rejected under 35 U.S.C. 103(a) as being  
15 unpatentable over Scantlebury in view of Anderson et al (6,645,432 B1).

Claims 11-26 require a channel and passing fluid through channels contained by the stamping surface.

Anderson et al disclose stamping patterns on a surface using a  
20 stamp containing channels through which fluid is passed. For example, see col 5, line 34 to col 6, line 16.

It would have been obvious to provide the stamp of Scantlebury with channels containing fluid to obtain the function of the fluid to form a pattern as disclosed by Anderson et al.

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***Response to Arguments***

Applicants' arguments are moot in view of the Scantlebury reference that replaces Maracas et al. Scantlebury discloses a diaphragm (stamp) that is convex before changing its dimensions to  
5 contact an article to which a pattern is transferred.

***Conclusion***

Claims 33-36, 116-119, 122 and 123 are free of the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff  
10 whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this  
15 application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David M. Naff  
Primary Examiner  
Art Unit 1651

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DMN  
3/18/06